PB89-206346

Superfund Record of Decision (EPA Region 3)
Aladdin Plating Superfund Site, Chinchilla, PA
(First Remedial Action) September 1988

(U.S.) Environmental Protection Agency, Washington, DC

27 Sep 88

U.S. Department of Commerce
National Technical Information Service
NTIS

United States
Environmental Protection
Agency

Office of
Emergency and
Remedial Response

EPA/ROD/R03-88/062
September 1988

PB89-206346

EPA

Superfund Record of Decision:

Aladdin Plating, PA

REPRODUCED BY
U.S. DEPARTMENT OF COMMERCE
NATIONAL TECHNICAL INFORMATION SERVICE
SPRINGFIELD, VA. 22161

50272-101

REPORT DOCUMENTATION PAGE	1. REPORT NO. EPA/ROD/R03-88/062	2.	3. Recipient's Accession No. PB89 206346/AS
4. Title and Subtitle SUPERFUND RECORD OF DECISION Aladdin Plating, PA First Remedial Action			5. Report Date 09/27/88 6.
7. Author(s)			8. Performing Organization Rept. No
9. Performing Organization Name and Address			10. Project/Task/Work Unit No. 11. Contract(C) or Grant(G) No. (C) (G)
12. Sponsoring Organization Name and Address U.S. Environmental Protection Agency 401 M Street, S.W. Washington, D.C. 20460			13. Type of Report & Period Covered 800/000 14.

15. Supplementary Notes

16. Abstract (Limit: 200 words)

The two-acre Aladdin Plating site is a former electroplating facility located in Scott and Abington Townships, Lackawanna County, Pennsylvania, approximately 1.5 miles north of the Town of Chinchilla. The area surrounding the site is wooded, with 4 residences within 100 yards and about 120 people living within a 0.25 mile radius. Approximately 11,000 people within 3 miles of the site use domestic and public ground water wells for drinking water. Site runoff flows northwest toward Leggetts Creek, a principal tributary of Griffin Pond Reservoir. Leggetts Creek and Griffin Pond are sources of supplemental drinking water for more than 100,000 people. The nearest residential well is less than 1,500 feet from the site. Aladdin Plating conducted electroplating operations from 1947 to 1982. Hazardous materials used in operations include sulphuric acid, chromic acid, cyanide, chromium, and other heavy metals. For 35 years, electroplating waste effluents containing heavy metals and other contaminants were discharged via a ditch and underground pipes to a shallow surface lagoon near the electroplating building. A fire destroyed the facility and ended operations in 1982. Three source areas of contamination have been identified: the site of the former plating facility building, a buried trench (presumably the building's floor drain), and the lagoon. In 1983, chromium was detected in onsite soils. Subsequent testing by EPA
(See Attached Sheet)

17. Document Analysis a. Descriptors

Record of Decision
Aladdin Plating, PA
First Remedial Action
Contaminated Media: gw, soil
Key Contaminants: arsenic, chromium, lead

b. Identifiers/Open-Ended Terms

c. COSATI Field/Group

18. Availability Statement	19. Security Class (This Report) None	21. No. of Pages 28
	20. Security Class (This Page) None	22. Price

(See ANSI-Z39.18) See Instructions on Reverse OPTIONAL FORM 272 (4-77) (Formerly NTIS-35) Department of Commerce

EPA/ROD/R03-88/062
Aladdin Plating, PA
First Remedial Action

16. ABSTRACT (continued)

in 1984 also identified lead and cyanide in onsite soils. In addition, ground water samples from onsite monitoring wells showed significant levels of arsenic, cadmium, chromium, and lead; all exceeded their respective MCLs. In March 1987, EPA performed emergency response activities to remove significant immediate health threats. These responses included fencing contaminated zones and removing drums and vats containing hazardous wastes. This response action addresses only the remediation of the contaminated soil onsite. The ground water contamination will be addressed in a subsequent remedial action. The primary contaminants of concern affecting the soil and ground water are arsenic, chromium, and lead.

The selected remedial action for this site includes: excavation and offsite stabilization of approximately 12,000 yd^3 of contaminated soil, with disposal of the treated soil in an offsite landfill and replacement of the excavated soil with clean fill. The estimated present worth cost for this remedial action is $4,461,000 with no associated O&M costs.

RECORD OF DECISION

Site Name and Location

Aladdin Plating Superfund Site
Chinchilla, PA

Statement of Basis and Purpose

This decision document presents the selected remedial action for the Aladdin Plating Site, in Chinchilla, PA, developed in accordance with the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986 and is consistent, to the extent practicable, with the National Oil and Hazardous Substances Contingency Plan.

This decision is based upon the contents of the administrative record for the Aladdin Plating site. (Index attached)

The Commonwealth of Pennsylvania concurs with the selected remedy.

Description of the Remedy

This initial operable unit addresses the source of the contamination by remediation of the on-site contaminated soils. The remedy addresses the principal threats at the site by removing the Aladdin property as a source of future groundwater contamination and reducing the risks associated with exposure to the contaminated materials.

The major components of the selected source control remedy include:

- Excavation and off-site treatment, via stabilization, of approximately 12,000 cubic yards of contaminated soil.
- Disposal of the treated soils in an appropriate off-site landfill.
- Replacement of the excavated soil with clean fill

A supplemental remedial investigation and feasibility study will be prepared to identify the extent of, and future potential for, groundwater contamination and to develop and evaluate appropriate remedial alternatives.

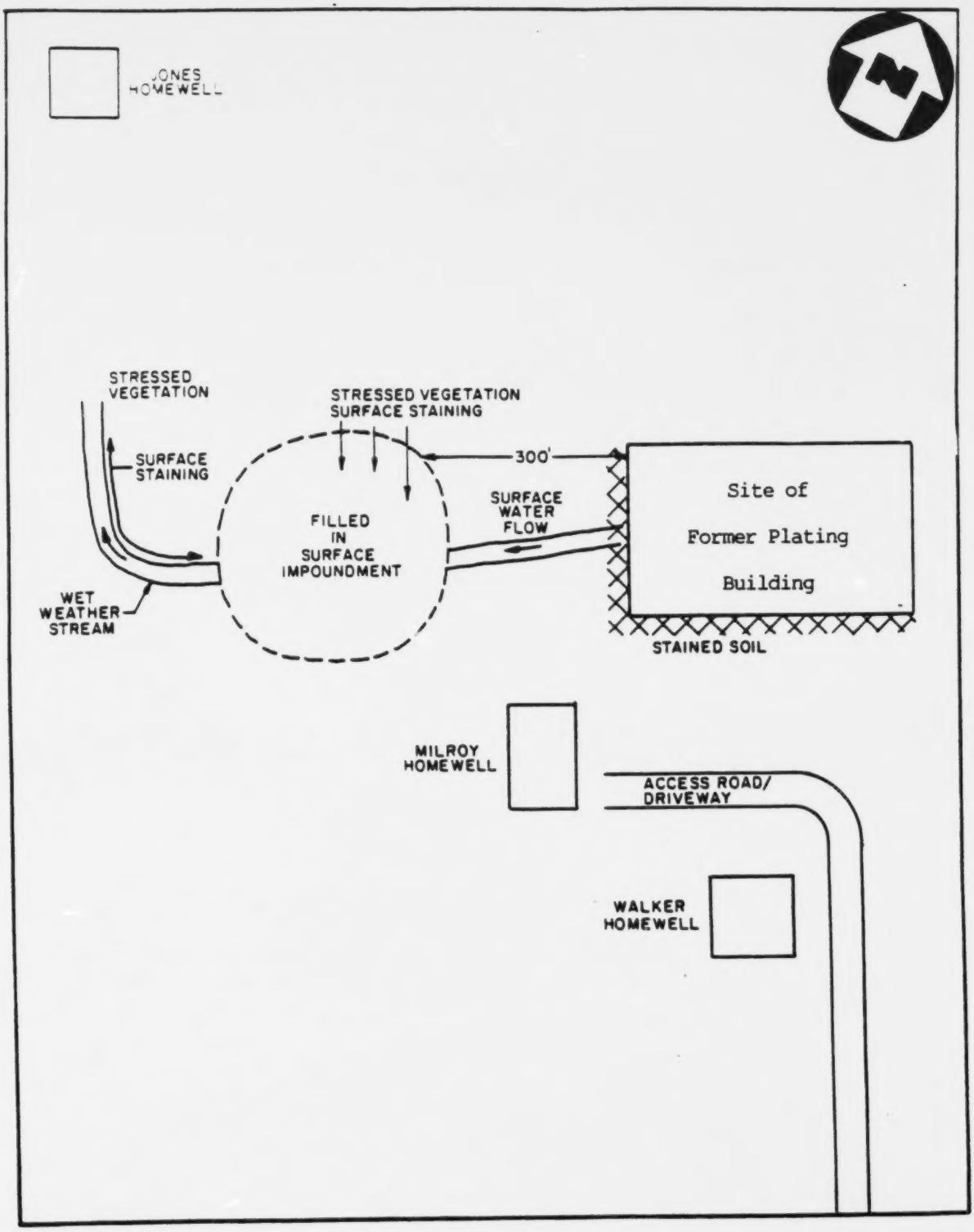
Declaration

The selected remedy is protective of human health and the environment, attains Federal and State requirements that are applicable or relevant and appropriate to the remedial action, and is cost-effective. This remedy satisfies the statutory preference for remedies that employ treatment that reduces toxicity, mobility or volume as a principal element and utilizes permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable. Because this remedy will not result in hazardous substances remaining on-site above health-based levels, the five year facility review will not apply to this action.

Stanley L. Laskowski
Acting Regional Administrator

9-27-88
Date

iii



SITE SKETCH

ALADDIN PLATING, LACKAWANNA CO., PA.

(NO SCALE)

iv

ALADDIN PLATING SITE LOCATION
SCOTT & ABINGTON TOWNSHIPS
LACKAWANNA COUNTY, PA

SOURCE DALTON & SCRANTON USGS QUADRANGLE MAPS

Summary of Remedial Alternative Selection
Aladdin Plating Site
Contaminated Soil Operable Unit

SITE LOCATION AND DESCRIPTION

The Aladdin Plating Site is located off of Layton Road approximately 1.5 miles north of the town of Chinchilla in Scott and South Abington Townships, Lackawanna County, Pennsylvania. Refer to Figure 1.

The former electroplating facility encompasses an approximately two acre grass field which is surrounded by woods. The small building which originally housed the electroplating operation was located in the northeastern corner of the site. (The remains of this building were removed from the site in Spring 1987 as part of EPA activities.) A marshy lagoon area that once received liquid wastes from plant operations is located to the west of the former electroplating building. Currently, four residences are located within 100 yards of the former facility and approximately 120 people live within a one-quarter mile radius of the site. (See Figure 2)

The land to the north of the site is sparsely populated and hilly and is used primarily for agricultural purposes. To the west of the site (2-3 miles) are the towns of Clarks Green and Clarks Summit in which a major concentration of the population in relation to the site is located. South of the site is a range of forested mountains that run in a northeastern direction.

SITE HISTORY

The Aladdin Plating facility is presently owned by Mr. Russell Richards. Mr. Richards operated an electroplating plant on the site from 1947 to 1982. Electroplating is a method of coating metal with rust-proof surfaces such as chrome or nickel. At the Aladdin plant objects were plated with nickel, copper, and chromium through a process that used sulfuric acid, chromic acid, cyanide, and water. During the electroplating process, the water used to rinse the plated objects became contaminated with metals and other electroplating solutions. During the 35 years of operation, electroplating waste effluents were discharged via a ditch to a shallow surface lagoon approximately 300 feet west of the electroplating building.

An estimated 11,000 people within 3 miles of the site rely on domestic and public ground-water supplies for drinking water. The nearest residential well is within 1,500 feet of the site property. Runoff from the site flows northwest toward Leggetts Creek which is a principal tributary of Griffin Pond. Griffin Pond, located about one mile from the site in the Town of Chinchilla, is a drinking water supply reservoir which is used to supplement the water supply for the City of Scranton (population 88,000). Water from the Griffin Pond intake also is sold to the Keystone Water Company and National Utilities Company to supplement their supplies which serves approximately 13,000 people. The Pennsylvania Gas & Water Company also has two water intakes along Leggetts Creek downstream of the site.

In 1974, following a routine inspection of the site, Pennsylvania Department of Environmental Resources (PADER) officials cited the company for violating the Pennsylvania Clean Streams Law and for operating without a permit to treat industrial waste. Although PADER ordered the owner to fill the lagoon, the company continued on-site disposal via pipelines which ran from the electroplating building underground to the lagoon area.

In the early part of 1982, a fire occurred at the facility which virtually destroyed the electroplating building. Chemical analysis performed by PADER in 1983 detected chromium in soil at several locations near the building and lagoon. EPA chemical analysis performed in 1984 also identified lead and cyanide in on-site soils in addition to chromium.

The site was subject to periodic testing by PADER and EPA contractors from 1984 to 1987. The Aladdin Plating Site was nominated for inclusion on the National Priorities List (NPL) in January, 1987.

According to EPA site inspection reports, vats, along with over 20 drums and other miscellaneous containers containing approximately 1,500 gallons of acids and bases, were left unsecured and exposed to the elements. EPA believed that the presence of these contaminants on site posed a significant health threat to nearby residents and potentially threatened local drinking water supplies. On February 24, 1987, officials from EPA, the Center for Disease Control (CDC), Agency of Toxic Substances and Disease Registry (ATSDR), and PADER visited the site to determine what actions would be taken to eliminate the risk of direct human contact with the hazardous wastes found on site. As a result of this visit, EPA began emergency response activities on March 4, 1987, to reduce the chance of human contact with the site contamination. EPA secured the site's most contaminated zones with fencing and sampled vats and drums remaining on site. EPA also began packing decaying drums into transportation containers and demolishing and removing the building rubble. On March 22, 1987, two drums containing solid cyanide were shipped off site, under police escort, to Tonelson Industries in Detroit, Michigan, for treatment and disposal.

Residential well sampling also was conducted in early 1987. EPA began testing the wells of residents living closest to the site and in this and two subsequent sampling actions over the following months gathered a total of 100 water samples from residential wells in the surrounding area. Based on the results of these tests, EPA informed the residents that no contamination was found. In addition, EPA conducted surface-water sampling of Griffin Pond in March 1987, but found no contamination in the samples.

The USEPA Environmental Response Team/Response Engineering Analytical Contractor (ERT/REAC) performed a hydrogeological investigation of the site which was conducted in phases: (1) a systematic shallow soil sampling program coupled with geophysical surveying, and (2) geologic and hydrogeologic investigations including well installation, sediment core logging and sampling, and chemical and hydraulic testing of the saturated zone. EPA's Technical Assistance Team assisted in the ground water survey by collecting residential well samples.

Site stabilization and the extent of contamination survey were conducted from March through December of 1987. Additional soil sampling was conducted in March 1988.

COMMUNITY RELATIONS HISTORY

Community awareness of the Aladdin Plating operation has been historically low. During initial interviews, most citizens acknowledged that they were aware of the plating facility but had not associated it with hazardous waste problems. At the time of the 1982 fire which destroyed the plant, most residents were primarily concerned about the threat posed by the fire, and were not aware that toxic chemicals were stored in the building. Recently, concern has been aroused as a result of the January 1987 news media coverage of the nomination of the site to the NPL. Specifically, residents became concerned about the safety of their drinking water after they learned from press reports that the site could pose a health risk as a source of ground-water contamination.

Two public meetings have been held. On March 23, 1987, EPA held a meeting to discuss events at the site and to answer questions from residents. In addition to notifying residents that initial well samples showed no chemical contamination, EPA outlined additional steps that were to be taken at that time to reduce the chance of human contact with the wastes at the site. On August 16, 1988, EPA held a meeting to present the Proposed Plan for the remedial activities at the site.

SCOPE OF OPERABLE UNIT

This response action is a source of contamination operable unit and is consistent with Section 300.68 (c) of the National Contingency Plan (NCP). This initial source of contamination operable unit is being implemented to protect public health and the environment by preventing direct contact with contaminated soils and controlling migration of contamination into the groundwater. The operable unit addresses known areas of surface and subsurface contamination in the site soils. The USEPA and PADER feel that direct contact with contaminated soils and migration of contamination into the ground water are the major concerns posed by this site. This operable unit was initiated to deal with these concerns. It is fully consistent with all future site work.

A ground water modeling study conducted by ERT determined that the ground water under the site is not moving quickly, if at all, from under the site and, therefore, does not pose a risk which needs to be addressed as part of the present operable unit. A future RI/FS is planned to determine the need for and type of ground water remediation. The result of this study, and its recommendations, will be described in a future operable unit Record of Decision.

SITE CHARACTERISTICS

In February, 1988, EPA's (ERT/REAC) completed a report entitled "Hydrologic Investigation - Aladdin Plating Site" which summarized all ground water and soil analytical data that had been collected by the EPA Emergency Response Contractor, EPA's Technical Assistance Team and ERT/REAC during the previous year. Non-carcinogenic risks from the contaminated ground water and exposed soil locations on the site were calculated based on present site conditions. These risks are determined by comparing potential exposure of site visitors to contaminant specific reference doses. The reference dose is an estimate of the lowest exposure level that would not be expected to cause adverse effects when exposure occurs.

The analytical results from the investigation can be found in the report "Hydrogeological Investigations - Aladdin Plating Site, Scott and South Abington Townships, Lackawanna County, Pennsylvania - Final Draft Report", February 1, 1988. The risk assessment is detailed in the memo " Aladdin Plating Site - Hydrogeological Investigations", Dawn A. Ioven, Toxicologist to Richard Watman, RPM, dated September 8, 1988.

Soil Contamination

The initial phase of site work identified several source areas of contamination: the site of the former plating facility structure, a buried trench (presumably the building floor drain) and an abandoned lagoon. These contaminated areas stretch from east to west in a relatively narrow band across the center of the site, with natural surface drainage extending shallow contamination to the west and northwest of the abandoned lagoon area. The highest concentration of chromium in the shallow subsurface (6" - 12") was found to occur in the area of the floor drain discharge located between the building and lagoon areas.

In a worst case scenario, assuring that all chromium on-site is present in the hexavalent form and that a 16 kg child ingests 200 mg of the most contaminated on-site soils each day, the calculated dose to that child exceeds the reference dose for hexavalent chromium by slightly more than an order of magnitude.

Ground Water Contamination

The site appears to be situated atop of a buried paleo-valley unit in a sandstone and shale bedrock that has been filled with pleistocene glacial deposits. Locally, these deposits are divided into two types: those deposited by melting ice sheets (tills) and those deposited by meltwater action (outwash). Under the site, the tills and outwash deposits appear as alternating layers. The outwash sands and gravels can be subdivided into 3 units based on their relative position and permeability: shallow, upper and lower.

Chemical analysis of sediment cores obtained at depth during the drilling of shallow-on-site wells indicated that, while the vast majority of chromium was bound in soils near the surface, vertical migration had occurred through the vadose (unsaturated) zone in the vicinity of the presumed floor drain discharge. Consequently, later well sampling indicated that the shallow water table aquifer was contaminated within and hydraulically down gradient of this area. In addition, several semi-permeable sediment lenses within the overburden material have been contaminated. This vertical migration has occurred in spite of the very low permeability observed in most of the site sediments, and appears to be the result of the strong downward head gradient evidenced at the site, coupled with the long time frame of operation at the plating facility (35 years).

Elevated chromium concentrations were noted in several samples from a bedrock contact well located near the center of the northern property boundary. Contamination in this well is potentially significant because it provides a possible route for contamination of bedrock fracture systems from which local residents obtain their water supply. The fact that contamination is not observed in two on-site wells that intercept the shallow bedrock fracture system, and sampling of neighboring residential wells does not indicate a pattern of off-site contaminant migration, suggests that deep bedrock contamination has not occurred to date.

Ground water samples collected from on-site monitoring wells revealed significant levels of arsenic, cadmium, chromium and lead. All of these contaminants were found at levels above their respective Maximum Contaminant Levels (MCLs).

ALTERNATIVES EVALUATION

The major objective of the Engineering Evaluation/Cost Analysis (EE/CA) was to evaluate the need for an initial source control measure and possible actions which could be undertaken. As discussed above, this operable unit will not address ground water remediation. This will be addressed in the subsequent RI/FS. Due to the limited scope of the EE/CA which examined the threat to public health and the environment posed by the contaminated soils, alternatives were formulated to achieve the following goals:

- Minimize the potential for direct contact with the contamination.
- Minimize the potential for migration of surface contamination into the ground water.
- Provide measures that will be consistent with the final site remedy.

A comprehensive list of appropriate remedial technologies was identified for source control. These technologies were screened based on the characteristics of the site and the characteristics of the contaminants. The technologies which survived the initial screening were further screened based on effectiveness, implementability and cost. Cost was only used between alternative technologies providing similar degrees of protection and treatment.

Technologies which satisfied the screening requirements were refined to form remedial action alternatives. The five alternatives developed are detailed below. With the exception of the no action alternative, all are based on removal and/or treatment of 12000 cubic yards of contaminated soil.

Alternative 1 - No Action

The National Contingency Plan (NCP) requires that the "no action" alternative be considered through the detailed analysis. Under this alternative, EPA would take no further action at the site to control the sources of contamination.

The no action alternative does not meet EPA's goal of providing a permanent cleanup solution, nor does it comply with current statutory requirements, because site contamination would remain in place. It also does not address the public health and environmental concerns raised previously. There are no costs associated with implementing this alternative.

Alternative 2 - On-site extraction

This alternative would involve excavation of the soil and treating it with one or more chemicals and wash solutions to remove metals. The wash solution (containing the extracted contaminants) is further treated to remove the contaminants and the clean solution may be recycled to treat the soil or discharged. The number of washes, soil/solution ratios, and other process requirements are determined by site-specific conditions such as soil type, metals present, metals species, etc.

The treated soil may require disposal at a landfill, depending on the residual metal concentrations in the soil. The spent extraction solution containing metals must be treated prior to discharge. The metals may be recovered or concentrated for offsite disposal. Concentration by chemical precipitation may result in hazardous sludges being produced, which in turn must be disposed of properly.

The total estimated cost for implementing this alternative is $5,052,000. This assumes that the sludge from treating the metal extraction solution is the only material that must be disposed of offsite. There are no post-remedial activities or costs.

This alternative would permanently reduce the volume, mobility and toxicity of contaminated materials at the site to levels which meet public health standards. It will not be necessary to excavate and transport large volumes of soils, but the sludge left over from the treatment process will have to be disposed of in an approved hazardous waste facility.

Alternative 3 - Off-Site Stabilization

This process involves excavation of the contaminated soil and replacement with clean fill. The contaminated soil will be shipment off-site where it would be chemically reacted with an admixture. The material becomes a solidified mass and there is a

reduction in the amount of metals that can be leached. The material becomes a concrete-like solid which is stable over the long-term. Leachate tests have been conducted on these materials and they have shown that the leachate contained metal concentrations below EPA's EP toxicity limits. The concrete-like product with the immobilized metals will be disposed of, off-site, in an appropriate manner At least one commercially available stabilization process produces a stabilized product that can be disposed of as a non-hazardous waste.

The total estimated cost for implementing this alternative is $4,461,000. There are no post-remedial activities or costs.

This alternative would permanently reduce the volume, mobility and toxicity of contaminated materials on site to levels which meet public health standards. In addition, depending on the treatment process, no hazardous sludges or other hazardous by-products will be produced which would require subsequent disposal.

Alternative 4 - Microencapsulation

In this process, contaminant particles in solid or liquid waste are immobilized by encapsulation materials which create small scale encapsulation cells. Metals contaminated soils would be excavated and mixed with a polymeric substance in an extruder to form a product in which the contaminants are encased in a polymeric matrix which is dispersed throughout the soil. Immobilizing materials (which form the matrix) may include polymers like polyethylene and other thermoplastics.

Very stable products are produced which afford strong resistance to long term chemical and mechanical stresses. Metals are held in the additive matrix resulting in their long-term immobilization.

Two commercially available treatment methods produce microencapsulated waste products which can be disposed of in a non-hazardous facility.

The total estimated cost for implementing this alternative is $6.0 million. There are no post-remedial costs or actions.

This alternative would provide desired levels of protection of public health by permanently removing the source of contamination from the site and the mobility of the hazardous materials removed would be reduced to the point that they could be disposed of in a non-hazardous facility.

Alternative 5 - Excavation and Off-site Disposal

This alternative would involve excavating the contaminated soils and hauling them to a RCRA permitted hazardous waste landfill. The excavated area would be regraded and backfilled with clean soil.

The total estimated cost for implementing this alternative is $2,730,000 capital costs. There are no post-remedial activities or costs.

This alternative would provide desired levels of protection of public health by removing the source of contamination from the site. It does not, however, satisfy EPA's policy giving preference to remedies using permanent solutions or alternative treatment methods. In addition, disposal of waste of this type without prior treatment has been prohibited as of August 8, 1988 by 42 U.S.C. 6924 (g) (6) unless EPA can certify that no treatment capacity is available.

SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

The five alternatives assembled were evaluated based on the following nine criteria:

- Overall protection of human health and the environment;
- Compliance with all federal and state applicable or relevant and appropriate requirements (ARARs);
- Reduction of toxicity, mobility or volume;
- Short term effectiveness;
- Long term effectiveness;
- Implementability;
- Cost;
- Community acceptance; and
- State acceptance.

A summary of the relative performance of the alternatives with respect to each of the nine criteria is provided in this section.

Overall Protection

All of the alternatives, with the exception of the no action alternative, would provide adequate protection of human health and the environment by eliminating, controlling or reducing risk through treatment and/or permitted disposal. The preferred alternative would eliminate the direct contact threat and prevent future ground water contamination while creating no hazardous by-products or residues.

Long-Term Effectiveness and Permanence

With the exception of the no-action alternative, all of the alternatives would provide adequate protection of human health and the environment by eliminating, controlling or reducing risk through treatment and/or permitted disposal. The preferred alternative would also treat the contaminated soils to the point where they could be disposed of as non-hazardous waste.

Compliance with ARAR's

All alternatives except the no action alternative would comply with applicable or relevant and appropriate requirements of Federal and State environmental laws.

Reduction of Toxicity, Mobility, or Volume of Contaminants

Three of the 5 alternatives would treat the waste. Alternative 2 would produce a contaminated sludge, while alternatives 3 and 4 would not produce any hazardous by-product or sludge.

Short term effectiveness

Alternatives 3, 4 and 5 would remove the contaminated soils fro the site within several months. There would be some small risk of exposure to the public from the excavation and removal operations. Routine dust and erosion control measures implemented during remediation would minimize any public exposure. Air monitoring will be conducted to assure that the health of the local residents is protected. Alternative 2 would leave contaminated soils stockpiled on-site until the treatment is complete.

Implementability

Alternatives 2, 3, 4, and 5 have all been proven either in full scale uses or in pilot studies.

Cost

Alternative 1 has no costs. The construction costs for each of the remaining alternatives are estimated to be as follows: Alternative 2: $5,052,000; Alternative 3: $4,461,000; Alternative 4: $6,000,000; Alternative 5: $2,730,000. In each case, the present worth costs are identical to the above capital costs.

Community Acceptance

Two public meetings have been held for the site. The first was held in March, 1987, to announce the mobilization of EPA's Emergency Response Team on the site and to discuss the removal plans and address citizen questions. The second meeting was held in August, 1988, to discuss remedial alternatives, including EPA's preferred alternative.

Overall, the general attitude of the residents and local officials is positive. The only comments from the local residents have concerned potential truck traffic and air pollution during excavation operations.

State Acceptance

The Commonwealth of Pennsylvania, through the PA Department of Environmental Resources (DER), concurs with the selected remedy.

SELECTED ALTERNATIVE

After careful consideration of the proposed cleanup solutions, EPA's selected alternative for addressing the contaminated soils is alternative 3: Stabilization. Alternative 3 would permanently reduce the mobility and toxicity of the contaminated materials at the site to levels which meet public health and environmental standards, while not creating any hazardous by-products or residues which would have to properly disposed of. Soil contamination levels will be monitored during cleanup to assure that all contamination, including off-site drainage, is addressed.

Clean-up Levels

This initial source-control operable unit is being implemented to eliminate the threat of direct contact with contaminated soils to persons walking on-site as well as to reduce the potential for migration of the contamination to the groundwater below the site. To accomplish these aims, contaminated soils will be removed down to a depth where the remaining chromium contamination is 50 ppm or less, and will be replaced with clean soil. It is anticipated that 12000 cubic yards of soil will need to be removed in order to meet this goal. Chromium is the major contributor to risk at the site and the remedial activity described above will be protective of human health and the environment. ERT calculations show that future

impact on the ground water resulting from this remaining soil contamination will be at levels below the MCLs cited above.

Operation and Maintenance

There is no annual operation and maintenance (O&M) activity associated with the selected alternative.

STATUTORY DETERMINATIONS

The U.S. EPA and PADER believe that this remedy will satisfy the statutory requirements of providing protection of human health and the environment, attaining applicable or relevant and appropriate requirements and other environmental statues, will be cost-effective, will utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable, and will satisfy the preference for treatment as a principal element.

Protection of Human Health and the Environment

The selected remedy provides adequate protection of human health and the environment by preventing direct contact with contaminated soils and reducing future migration of contamination into the groundwater.

Attainment of Applicable or Relevant and Appropriate Requirements (ARARs)

This remedy will comply with all ARARs. Significant ARARs are listed in Table I.

Cost-Effectiveness

This alternative affords a high degree of overall effectiveness in not only protecting any future site visitor from direct contact with contaminated soils, but also in reducing future contamination migrating to the groundwater to levels below present MCLs. The U.S. EPA believes that the costs of the selected remedy are proportionate to the overall effectiveness it affords such that it represents a reasonable value for the money.

TABLE I

Applicable or Relevant and Appropriate Requirements

Aladdin Plating Site

Applicable Federal Requirements	OVERVIEW
1. Hazardous Waste Requirements (RCRA Subtitle, 40 CFR Part 264)	Resource Conservation and Recovery Act (RCRA) of 1976 (Amended 1984) governs the generation, transportation, storage, and disposal of hazardous wastes. RCRA 40 CFR Part 264 standards are used for actions including offsite hauling and disposal of hazardous wastes, onsite capping and landfilling, and groundwater monitoring.
2. Safe Drinking Water Act -Maximum Contaminant Levels (MCLs)	The Safe Drinking Water Act promulgated National Primary Drinking Water Standard Maximum Contaminant Levels (MCLs). MCLs are enforceable standards for contaminants in public drinking water supply systems. They not only consider health factors, but also the economic and technical feasibility of removing a contaminant from a water supply system.
3. OSHA requirements (29 CFR, Parts 1910, 1926, and 1904)	OSHA regulations provide occupational safety and health requirements applicable to workers engaged in onsite field activities.
4. DOT Rules Hazardous Materials Transport (49 CFR, Parts 107, 171. 1-171.500)	DOT regulates the transport of hazardous waste materials including packaging, shipper equipment, and placarding. These requirements are considered applicable to any waste shipped offsite for laboratory analysis, treatment, or disposal.

Applicable State Requirements	OVERVIEW
1. Pennsylvania Solid Waste Disposal Regulations, PA Code Title 25, Chapter 75, Subchapter D	Governs the generation, transportation, storage, and disposal of hazardous wastes.

Utilization of Permanent Solutions and Alternative Treatment Technologies to the Maximum Extent Practicable.

The U.S. EPA believes this remedy is the most appropriate solution for controlling the source of contamination at the site. As the contaminated soil will be excavated and rendered permanently non-hazardous at an off-site facility, this remedy represents the maximum extent to which permanent solutions and treatment can be utilized.

Preference for Treatment as a Principal Element

The statutory preference for treatment is satisfied as the selected remedy calls for removal and off-site treatment of the contaminated soils.

III. SUMMARY OF MAJOR COMMENTS AND EPA RESPONSES

EPA invited public comment on the Proposed Plan for the Aladdin Plating Superfund site and other site-related information from August 16, 1988 through September 14, 1988. On the first day of the public comment period, EPA held a public meeting at the Justus Fire Hall in Clark Summit, Pennsylvania to discuss the remedial alternatives presented in the Proposed Plan with local officials and residents. EPA representatives in attendance at the meeting included:

Thomas C. Voltaggio - EPA Superfund Branch Chief
Nanci Sinclair - EPA Community Relations Coordinator (CRC)
Richard Watman - EPA Remedial Project Manager (RPM)
Frances Burns - Previous EPA RPM
Edward Martin Powell - EPA On-Scene Coordinator (OSC)

The meeting was opened at 8:15 p.m. by the EPA Community Relations Coordinator (CRC) for the Aladdin site, Nanci Sinclair, who explained that the purpose of the meeting was to discuss remedial alternatives for the site and to hear the public's responses to them. She pointed out that copies of the EE/CA Report had been deposited in the information repositories for Scott and South Abington Townships and that a fact sheet summarizing the alternatives was available at the meeting. The EPA On-Scene Coordinator for the site, Marty Powell, reviewed emergency removal activities that have been completed by EPA, and the EPA Remedial Project Manager (RPM), Rich Watman, described the remedial alternatives evaluated in the EE/CA Report and EPA's preferred alternative. The meeting concluded with a question-and-answer period.

The public comments summarized below are organized according to the following general subject areas: (a) human health and safety; (b) nature and extent of contamination; (c) groundwater issues; (d) alternative remedies; (e) site sampling; (f) post-cleanup status of the site; and (g) other comments. These comments include those voiced at the public meeting or submitted to EPA in writing. Three written comments have been received by EPA, all of which were generally supportive of EPA's work at the Aladdin site. EPA will take both verbal and written comments into consideration in determining the best remedial alternative for addressing contamination at the Aladdin site. The selection of this alternative will be outlined by EPA in a formal Record of Decision (ROD). The ROD is typically signed shortly after the close of the public comment period.

A. Human Health and Safety

Comment: Several residents asked what precautions EPA would use to protect residents and workers from dust, fumes, and other means of exposure to contaminants during remedial activities.

15

EPA Response: The spread of airborne contaminants will be prevented by keeping the work area damp with water carried on a truck. Workers will be protected by measures at least as stringent as those required by federal regulations. Air sampling and monitoring stations on the site and around its perimeter will provide protection for both workers and residents. Operations will be shut down if contaminant levels are above background readings, well before standards are exceeded.

Before the remedial work begins, EPA will develop a health and safety plan to govern this phase of the cleanup. At that time, EPA will hold another public meeting to explain the contents of the plan and discuss any remaining health and safety concerns the community may have.

Comment: One resident suggested that a monitoring device be placed at the mobile home located on the site, noting that one of the two occupants of the trailer is a child. A written comment also requested that special measures be taken to control airborne contamination in the vicinity of this mobile home, pointing out that the trailer is situated 20-50 feet from removal activities and that the child living in the trailer often plays in the yard.

EPA Response: EPA plans to locate monitoring devices at the residences nearest the site, and acknowledges that the trailer also may be an appropriate location.

Comment: One written comment requested that EPA take safety measures to protect neighborhood children from truck traffic associated with the site.

EPA Response: EPA noted that the cleanup will involve a significant amount of truck traffic -- perhaps twenty-to-thirty trucks per day, six days a week traveling to and from the site, -- which may disrupt the neighborhood. EPA and contractors working on site will cooperate with the neighborhood as much as possible to minimize disturbances. EPA will coordinate with the town's needs regarding timing of truck traffic (e.g., work around school bus schedules). Workers are constrained, however, to work only during daylight hours.

B. Nature and Extent of Contamination

Comment: Residents asked about the depth of soil contamination and the volume of contaminated soil needing removal.

EPA Response: The depth of soil contamination varies; in the area of the lagoons, it is approximately six feet deep. Current estimates indicate that approximately twelve thousand cubic yards of soil require removal.

Comment: A resident asked if EPA had determined where the perimeter of the lagoon area lies, and whether or not cleanup activities would occur on her land.

EPA Response: EPA informed the resident that the monitoring well on her land does reveal contamination, but that further sampling is planned in the lagoon drainage area to determine the extent of contamination.

C. Groundwater Issues

Comment: One resident asked how EPA plans to clean up groundwater contamination.

EPA Response: EPA will be conducting further investigations to determine whether or not cleaning up the groundwater contamination associated with the Aladdin site will be necessary. When EPA has identified alternatives for addressing groundwater contamination, another public meeting will be held to discuss the proposed alternatives with the community.

Comment: One resident asked when EPA sampled the off-site/perimeter groundwater wells and whether the results of the samples had differed from previous samples.

EPA Response: These wells were sampled in July 1987 and May 1988. The results of the two sampling efforts were comparable. Although there was a slight fluctuation in the results, EPA attributes this to the fact that the samples were taken in different seasons and analyzed by different labs.

Comment: Two meeting participants expressed concern about the frequency and duration of EPA's groundwater monitoring activities, indicating that they would like to see frequent and continuing monitoring. One person urged EPA to sample wells on a continual basis, particularly during site disturbance associated with cleanup activities and after heavy rains. Two residents submitted written requests for additional sampling of their well water during site excavation.

EPA Response: EPA has completed one round of sampling, and does intend to conduct an additional round during site excavation. The data obtained to date indicates that the groundwater contamination is not moving toward residences quickly, if at all. For this reason, EPA does not consider it urgent to sample the groundwater again soon. No decisions have been made about how far into the future monitoring will continue.

D. Alternative Remedies

Comment: One resident asked for clarification about the difference between Alternatives 3 and 5. He asked whether both involved removal of contaminated materials and off-site treatment. He also asked if the treatment called for under Alternative 3 would delay removal of contaminated soils, and suggested that under Alternative 5, treatment could be done off site after all waste had been removed and replaced with clean topsoil, thereby expediting removal.

EPA Response: EPA verified that plans for excavating and removing wastes from

the site are the same under Alternatives 3 and 5; however, plans for treatment differ. Alternative 3 calls for treating the waste to render it non-hazardous, while Alternative 5 does not. Under Alternative 3, treatment capacity may be a constraint because at this time EPA knows of only one appropriate treatment facility, and such facilities can only accept a certain number of trucks per day.

Alternative 5 would require a variance of new statutory requirements because it calls for disposal of untreated waste in a landfill. Congress recently passed legislation prohibiting disposal of hazardous waste in landfills unless it has been treated first. Although variances are possible if no treatment facility is available, EPA would prefer not to use that option.

Comment: Two meeting participants and one written comment expressed concern about the quality of the fill that would be brought in to replace excavated soil under Alternative 3. One resident wanted EPA to certify in writing that contaminated materials would not be returned to the site. Another resident wanted to know if the fill might be soil that had been excavated from another hazardous waste site and then treated and tested. The written comment expressed reservations about the fact that the EE/CA Report did not specify that stabilization would take place off-site, that excavated materials would not be returned to the site, and that fill would consist of uncontaminated soil.

EPA Response: EPA indicated that the ROD would state in writing that excavated materials would not be brought back to the site, that the stabilizing treatment would occur off-site, and that the fill material would be clean fill. The EE/CA Report contains only suggested remedies, while the ROD documents the official remedy and carries the weight of law.

E. Site Sampling

Comment: Two residents expressed concern about possible contamination of drinking water supplies in Griffin Pond, which constitutes a portion of the public water supply for the City of Scranton.

EPA Response: EPA sampled Griffin Pond during the emergency response conducted in the spring of 1987. Although the pond was one of the most likely areas to receive run-off from the site, sampling results revealed no detectable contamination. EPA does intend to sample the pond again in the future.

Comment: A written comment indicated a local resident's belief that soil samples taken by EPA in 1987 had been lost, and requested repeat sampling.

EPA Response: Results of all soil samples are available for review in the Administrative Record maintained by EPA. If additional soil samples need to be taken, EPA will do so before site excavation begins.

F. Post-Cleanup Status of the Site

Comment: A resident asked how the site would be categorized after cleanup.

EPA Response: EPA explained that after the cleanup, the site probably will be "delisted," which is the reverse of the listing process. As part of the delisting process, an account of site cleanup activities will be published in the Federal Register, along with a statement from EPA that the site is clean. Following a public comment period, the site is then removed from the National Priorities List. This will not occur, however, until EPA has cleaned up the groundwater contamination or determined that groundwater remediation is not necessary. Further investigation of the groundwater is planned following the removal of soil contaminants.

Comment: One meeting participant and two written comments requested that EPA return the site to its original contours following the cleanup. The meeting participant was particularly concerned about the northwest corner of the site, noting an unusually high degree of runoff from that area after a recent storm.

EPA Response: EPA does intend to re-contour the site.

G. Other

Comment: Several residents expressed concern about how long it will take to remove contaminants from the site.

EPA Response: EPA expects to begin the removal in late September or October 1988. Actual cleanup may not start until October 1988 because the public comment period is open until September 14 1988, and any comments submitted will be considered in cleanup decisions. In addition, there is an administrative complication with obtaining funds for the removal.

Once the ROD is signed and funds are in place, it will take several weeks for EPA contractors to set up equipment, about twelve weeks to excavate the contaminated soil, and a few more weeks to replace the excavated area with clean fill. Work will continue until snow stops the trucks or frozen ground stops the excavation, and will resume in the spring of 1989. Work will continue, however, until the job has been completed.

Comment: A resident suggested that EPA bring in clean fill as excavation progresses, rather than wait until all contaminants have been removed.

EPA Response: EPA does plan to bring in clean fill as work progresses to the extent possible. A road will be constructed through the area where the plant was in order to get the trucks off the town's roads. Once this area has been dug up and staged below, fill will be brought in. The work will be undertaken in cells to avoid contamination of clean fill.

Comment: A resident requested that the next meeting be held in the fire hall located in South Abington Township.

EPA Response: EPA agreed to hold the next meeting in South Abington as long as a large enough meeting space was available. There will be a meeting after the signing of the ROD is announced to discuss logistical information and the safety plan. In addition, another meeting will be held in several months to discuss the groundwater study.

IV. CONCLUSION

EPA is in the process of selecting a remedial approach for the Aladdin Plating Superfund site. The public comments summarized above are being taken into consideration in making this decision. The selection of an alternative will be formalized in the ROD, which is signed by EPA's Regional Administrator. EPA will make an official announcement when this decision has been made.